

code for a management function of managing an image output job of the host computer,

wherein the condition information is obtained by forming color patches and measuring colors on the color patches,

wherein the host computer performs image processing of image data in accordance with the condition information transmitted by the transmission function, and quantizes the processed image data, and

wherein each of the plurality of image output units outputs an image based on the image data processed by the host computer.

REMARKS

This application has been reviewed in light of the Office Action dated December 20, 2001. Claims 1-4 and 6-15 remain pending for examination. Claim 5 has been cancelled, without prejudice or disclaimer of the subject matter presented therein. Claims 1, 7, 11-15, the only independent claims, have been amended to define more clearly what Applicant regards as his invention. Favorable reconsideration is requested.

The Office Action rejected Claims 1, 3-6, 12, and 14 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,572,632 (Laumeyer et al.) in view of U.S. Patent No. 5,872,895 (Zandee et al.). Claims 7-11, 13, and 15 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,932,834 (Thieret et al.) in view of Laumeyer et al. Claim 2 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Laumeyer et al. in

view of Zandee et al., and further in view of Thieret et al. Applicant submits that independent Claims 1, 7, and 11-15, together with the claims dependent thereon, are patentably distinct from the cited prior art for at least the following reasons.

The aspect of the present invention set forth in Claim 1 is directed to an image processing apparatus. The apparatus includes a communicator, an input unit, an acquisition unit, and an image processor. The communicator performs two-way communications with an image output unit that includes an update unit for updating condition information indicating a condition of the image output unit and a memory for storing the condition information. The condition information is obtained by forming color patches and measuring colors on the color patches. The input unit inputs an image output instruction. The acquisition unit acquires the condition information stored in the image output unit by utilizing the two-way communications, in response to the image output instruction. The image processor performs image processing of image data in accordance with the condition information acquired by the acquisition unit, quantizes the processed image data, and outputs the quantized image data to the image output unit using the communicator.

One important feature of Claim 1 is that the image processor performs image processing of image data in accordance with condition information acquired from the image output unit in response to an image output instruction. The processed image data is then quantized, and the quantized image data is outputted to the image output unit. By virtue of this feature, the image processing apparatus of Claim 1 can perform image processing in accordance with the latest condition information acquired from the image output unit before quantizing the

image data.

Laumeyer et al., as understood by Applicant, relates to a frame buffering system used in processing color image data. Zandee et al., as understood by Applicant, relates to a system for color matching by exchanging a color profile between devices of a computer system 10.

Applicant submits that a combination of Laumeyer et al. and Zandee et al., assuming such combination would even be permissible, would fail to teach or suggest an image processing apparatus that includes "an acquisition unit for acquiring the condition information stored in the image output unit by utilizing the two-way communications, in response to the image output instruction," and "an image processor for performing image processing of image data in accordance with the condition information acquired by said acquisition unit, quantizing the processed image data, and outputting the quantized image data to the image output unit using said communicator," as recited in Claim 1.

Laumeyer et al. is believed to teach away from Claim 1, because Laumeyer et al. is understood to disclose that quantization (the rounding off of fractional parts of values) is performed by a converter 20 of a color printer 19. That is, Laumeyer et al. apparently teaches that quantization of image data is performed *after transmission* of the image data to the color printer 19 (image output unit). The image processing apparatus of Claim 1, however, acquires the condition information from the image output unit, processes the image data according to the condition information, quantizes the processed image data, and then outputs the quantized image data to the image output unit. Thus, quantization occurs *before* the image data is output to the

image output unit. Zandee et al. is believed to be silent regarding such a feature.

Accordingly, Applicant submits that Claim 1 is patentable over the cited art, and respectfully requests withdrawal of the rejection under 35 U.S.C. § 103(a). Independent Claims 12 and 14 are method and storage medium claims corresponding to Claim 1, and are believed to be patentable for at least the same reasons as discussed above.

The aspect of the present invention set forth in Claim 7 is directed to an image processing apparatus connected, via a communication network, with a host computer and a plurality of image output units. Each image output unit has a function of updating condition information of the image output unit, wherein the condition information is obtained by forming color patches and measuring colors on the color patches. The apparatus includes an input unit, a memory, a transmitter, and a management unit. The input unit inputs the condition information updated by the plurality of image output units. The memory stores the inputted condition information in association with each of the plurality of image output units. The transmitter transmits the stored condition information to the host computer in accordance with a request for acquiring the condition information issued by the host computer. The management unit manages an image output job of the host computer. The host computer performs image processing of image data in accordance with the condition information transmitted by the transmitter, and quantizes the processed image data. Each of the plurality of image output units outputs an image based on the image data processed by the host computer.

Thieret et al., as understood by Applicant, relates to a server for monitoring a machine and providing a corrective response to the machine. Apparently, Thieret et al. teaches

that the server performs diagnostics of the machine, and generates trend data, fault prediction data, and corrective data.

Applicant submits that a combination of Thieret et al. and Laumeyer et al., assuming such combination would even be permissible, would fail to teach or suggest an image processing apparatus that includes "a transmitter for transmitting the stored condition information to the host computer in accordance with a request for acquiring the condition information issued by the host computer," and "a management unit for managing an image output job of the host computer," wherein "the host computer performs image processing of image data in accordance with the condition information transmitted by said transmitter, and quantizes the processed image data," as recited in Claim 7

As discussed above, Laumeyer et al. is understood to disclose that quantization is performed by the color printer 19 (image output unit). The image processing apparatus of Claim 7, however, transmits the condition information to the host computer, which processes the image data according to the condition information, quantizes the processed image data, and then provides the quantized image data to the image output unit. Thus, quantization occurs *before* the image data is provided to the image output unit. Thieret et al. is believed to be silent regarding such a feature.

Accordingly, Applicant submits that Claim 7 is patentable over the cited art, and respectfully requests withdrawal of the rejection under 35 U.S.C. § 103(a). Independent Claims 13 and 15 are method and storage medium claims corresponding to Claim 7, and are believed to be patentable for at least the same reasons as discussed above. Additionally,

independent Claim 11 includes a feature of similar to that of Claim 7 discussed above, in which a network terminal acquires condition information, processes image data according to the condition information, quantizes the processed image data, and then provides the quantized image data to an image output apparatus. Accordingly, Claim 11 is believed to be patentable for at least the same reasons as discussed above.

The other claims in this application depend from one or another of the independent claims discussed above and, therefore, are submitted to be patentable for at least the same reasons. Since each dependent claim is also deemed to define an additional aspect of the invention, individual reconsideration of the patentability of each claim on its own merits is respectfully requested.

This Amendment After Final Action is believed clearly to place this application in condition for allowance and, therefore, its entry is believed proper under 37 C.F.R. § 1.116. Accordingly, entry of this Amendment, as an earnest effort to advance prosecution and reduce the number of issues, is respectfully requested. Should the Examiner believe that issues remain outstanding, it is respectfully requested that the Examiner contact Applicant's undersigned attorney in an effort to resolve such issues and advance the case to issue.

In view of the foregoing amendments and remarks, Applicant respectfully requests favorable reconsideration and early passage to issue of the present application.

Applicant's undersigned attorney may be reached in our New York Office by telephone at (212) 218-2100. All correspondence should continue to be directed to our address listed below.

Respectfully submitted,



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VERSION WITH MARKINGS TO SHOW CHANGES MADE TO CLAIMS

1. (Amended Four Times) An image processing apparatus comprising:

 a communicator for performing two-way communications with an image output unit that includes an update unit for updating condition information indicating a condition of the image output unit and a memory for storing the condition information, wherein the condition information is obtained by forming color patches and measuring colors on the color patches;

 an input unit for inputting an image output instruction;

 an acquisition unit for acquiring the condition information stored in the image output unit by utilizing the two-way communications, in response to the image output instruction; and

 an image processor for performing image processing of image data in accordance with the condition information acquired by said acquisition unit[; and

 a data output unit for outputting the image data processed by said image processor to the image output unit using said communicator in order to make said image output unit output an image], quantizing the processed image data, and outputting the quantized image data to the image output unit using said communicator.

Claim 5 has been canceled.

7. (Amended Four Times) An image processing apparatus connected, via a

communication network, with a host computer and a plurality of image output units, each image output unit having a function of updating condition information of the image output unit, the condition information being obtained by forming color patches and measuring colors on the color patches, said apparatus comprising:

an input unit for inputting the condition information updated by the plurality of image output units;

a memory for storing the inputted condition information in association with each of the plurality of image output units;

a transmitter for transmitting the stored condition information to the host computer in accordance with a request for acquiring the condition information issued by the host computer; and

a management unit for managing an image output job of the host computer, wherein the condition information is obtained by forming color patches and measuring colors on the color patches,

wherein the host computer performs image processing of image data in accordance with the condition information transmitted by said transmitter, and quantizes the processed image data, and

wherein each of the plurality of image output units outputs an image based on the image data processed by the host computer.

11. (Amended Four Times) An image processing method for performing image

processing in a network system to which an image output apparatus, a server, and a network terminal are connected, said method comprising:

in the image output apparatus:

a condition measurement function of updating condition information by forming color patches and measuring colors on the color patches; and
a notification function of notifying the server of the updated condition information,

in the server:

a storage function of storing the updated condition information notified from the image output apparatus in correspondence with a type of the image output apparatus; and

a management function of managing an image output job, and

in the network terminal:

an input function of inputting an image output instruction of a user;

an acquisition function of acquiring the updated condition information stored in the server in response to the image output instruction; and
an image processing function of performing image processing using an

image processing condition in accordance with the updated condition information[; and
an output function of outputting image data processed in said image processing function to the image output apparatus in order to make the image output apparatus output an image], quantizing the processed image data, and outputting the quantized image data

to said image output apparatus.

12. (Amended Four Times) An image processing method performed in a server connected, via a communication network, with a host computer and a plurality of image output units, each image output unit having a function of updating condition information indicating a condition of the image output unit, said method comprising:

an input step of inputting an image output instruction;

an acquisition step of acquiring the condition information stored in the image output unit by utilizing two-way communications, in response to the image output instruction;
and

an image processing step of performing image processing of image data in accordance with the condition information acquired in said acquiring step[; and

an output step of outputting the image data processed in said image processing step to the image output unit using the communication network in order to make the image output unit output an image], quantizing the processed image data, and outputting the quantized image data to the image output unit,

wherein the condition information is obtained by forming color patches and measuring colors on the color patches.

13. (Amended Four Times) An image processing method performed in a server connected, via a communication network, with a host computer and a plurality of image output

units, each image output unit having a function of updating condition information of the image output unit, said method comprising:

an input step of inputting the condition information updated by the plurality of image output units;

a storage step of storing the inputted condition information in association with each of the plurality of image output units;

a transmission step of transmitting the stored condition information to the host computer in accordance with a request for acquiring the condition information issued by the host computer; and

a management step of managing an image output job of the host computer, wherein the condition information is obtained by forming color patches and measuring colors on the color patches,

wherein the host computer performs image processing of image data in accordance with the condition information transmitted in said transmitting step, and quantizes the processed image data, and

wherein each of the plurality of image output units outputs an image based on the image data processed by the host computer.

14. (Amended Four Times) A computer-readable storage medium that stores a program for implementing, by a computer, an image processing method, the program comprising:

code for a communication function of performing two-way communications with an image output unit having an update unit for updating condition information indicating a condition of the image output unit and a memory for storing the condition information, wherein the condition information is obtained by forming color patches and measuring colors on the color patches;

code for an input function of inputting an image output instruction;
code for an acquisition function of acquiring the condition information stored in the image output unit by utilizing the two-way communications, in response to the image output instruction; and

code for an image processing function of performing image processing of image data in accordance with the condition information acquired by the acquisition function[; and

code for an output function of outputting the image data processed by the image processing function to the image output unit using the communication function in order to make the image output unit output an image], quantizing the processed image data, and outputting the quantized image data to the image output unit using the communication function.

15. (Amended Four Times) A computer-readable storage medium that stores a program for an image processing method performed by a server connected, via a communication network, with a host computer and a plurality of image output units, each image output unit having a function of updating condition information of the image output unit, the program comprising:

code for an input function of inputting the condition information updated by the plurality of image output units;

code for a storage function of storing the inputted condition information in association with each of the plurality of image output units;

code for a transmission function of transmitting the stored condition information to the host computer in accordance with a request for acquiring the condition information issued by the host computer; and

code for a management function of managing an image output job of the host computer,

wherein the condition information is obtained by forming color patches and measuring colors on the color patches,

wherein the host computer performs image processing of image data in accordance with the condition information transmitted by the transmission function; and quantizes the processed image data, and

wherein each of the plurality of image output units outputs an image based on the image data processed by the host computer.